The Light company
Houston Lighting & Power South Texas Project Electric Generating Station P. O. Box 289 Wadsworth, Texas 77483

November 6, 1996
ST-HL-AE-5493
File No.: G09.07
10CFR50, Appendix R

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

South Texas Project
Units 1 and 2
Docket Nos. STN 50-498, STN 50-499
Response to Request for Additional Information (RAI) Regarding
10 CFR Part 50, Appendix R, Deviation Request for Fire Area 07

References: Correspondence from T. H. Cloninger to Document Control Desk, dated April 13, 1995 (ST-HL-AE-5016)

Correspondence from T. H. Cloninger to Document Control Desk, dated September 14, 1995 (ST-HL-AE-5165)

Correspondence from Thomas W. Alexion, NRC, to William T. Cottle, South Texas Project, dated July 26, 1996

Pursuant to your request of July 26, 1996, the South Texas Project submits the attached additional information regarding the deviation request submitted for 10 CFR 50, Appendix R. The response addresses the Nuclear Regulatory Commission staff's questions regarding administrative controls in place for control of transient combustibles in Fire Area 07, a bounding analysis postulating a fire that damages required safe shutdown equipment, and an analysis addressing the fire rating of component interfaces.

If there are any questions, please contact either Mr. P. L. Walker at (512)972-8392 or me at (512) 972-8787.

T. H. Cloninger
Vice President,
Nuclear Engineering

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PLW/lf

Attachment: Response to Request for Additional Information (July 26, 1996)

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Leonard J. Callan
Regional Administrator, Region IV
U. S. Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-8064

Thomas W. Alexion
Project Manager, Mail Code 13H3
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

David P. Loveless
Sr. Resident Inspector
c/o U. S. Nuclear Regulatory Comm.
P. O. Box 910
Bay City, TX 77404-0910

J. R. Newman, Esquire
Morgan, Lewis & Bockius
1800 M Street, N.W.
Washington, DC 20036-5869

M. T. Hardt/W. C. Gunst
City Public Service
P. O. Box 1771
San Antonio, TX 78296

J. C. Lanier/M. B. Lee
City of Austin
Electric Utility Department
721 Barton Springs Road
Austin, TX 78704

Central Power and Light Company
ATTN: G. E. Vaughn/C. A. Johnson
P. O. Box 289, Mail Code: N5012
Wadsworth, TX 77483

Rufus S. Scott
Associate General Counsel
Houston Lighting & Power Company
P. O. Box 61067
Houston, TX 77208

Institute of Nuclear Power
Operations - Records Center
700 Galleria Parkway
Atlanta, GA 30339-5957

Dr. Bertran Wolfe
15453 Via Vaquero
Monte Sereno, CA 95030

Richard A. Ratliff
Bureau of Radiation Control
Texas Department of Health
1100 West 49th Street
Austin, TX 78756-3189

U. S. Nuclear Regulatory Comm.
Attn: Document Control Desk
Washington, DC 20555-0001

J. R. Egan, Esquire
Egan & Associates, P.C.
2300 N Street, N.W.
Washington, D.C. 20037

J. W. Beck
Little Harbor Consultants, Inc.
44 Nichols Road
Cohassett, MA 02025-1166

AFFIDAVIT

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
Houston Lighting & Power	)	Docket Nos. 50-498
Company, et al.,	)	50-499
	)	
South Texas Project	)	
Units 1 and 2	)	

AFFIDAVIT

I, T. H. Cloninger, being duly sworn, hereby depose and say that I am Vice President, Nuclear Engineering, of Houston Lighting & Power Company; that I am duly authorized to sign and file with the Nuclear Regulatory Commission the attached response to a request for additional information regarding a 10CFR50, Appendix R deviation request for Fire Area 07; that I am familiar with the content thereof; and that the matters set forth therein are true and correct to the best of my knowledge and belief.

T.H. Cloninger
Vice President,
Nuclear Engineering

STATE OF TEXAS)
)
COUNTY OF MATAGORDA)

Subscribed and sworn to before me, a Notary Public in and for the State of Texas, this 6th day of November, 1996.

LINDA RITTENBERRY
Notary Public, State of Texas
My Commission Expires 10/9/97

Linda Rittenberry
Notary Public in and for the
State of Texas

ATTACHMENT

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
(JULY 26, 1996)

NRC Concern 1:

Describe in detail the administrative controls in place for the control of transient combustibles in Fire Area 07.

South Texas Project Response:

Access to Fire Area 07, Auxiliary Shutdown Panel Room, is normally controlled by the Control Room Unit or Shift Supervisors by way of key control. Security officers have normal security access. The administrative control procedures govern actions after access is granted by the control room.

The administrative controls for control of transient combustibles consist of plant procedures. The following is a list of the applicable procedures with a brief description:

- 0PGP03-ZF-0004, Control of Transient Fire Loads - Provides controls for common combustibles including:

  a. Guidance for the storage and handling of ordinary combustibles such as filter media, ion exchange resins, wood, and other combustible material.

  b. Prohibition of bulk storage of combustible materials inside of or adjacent to safety-related buildings or systems unless suitable protection is provided and documented.

  c. Guidance for handling and removal of waste, debris, oily rags, and other combustibles resulting from work activities in plant areas.

- 0PGP03-ZF-0005, Use of Flammable Liquids and Gases - Provides guidance and controls for combustibles for combustible and flammable liquids and gases, including storage, transfer, and use. Includes provisions for controlling storage of materials.

- 0PGP03-ZF-0006, Control of Ignition Sources - Provides controls for use of potential ignition sources such as cutting, welding and grinding. These controls include prohibition of the use of flame or combustion generated smoke for leak testing purposes, a permit system and provisions for compensatory measures.

- 0PGP03-ZF-0007, Control of Solvents, Paints and Painting Processes - Provides guidance for personnel involved in the use of paints and solvents to ensure fire safety and to protect smoke detectors from fume particulates.

- 0PGP03-ZF-0009, Smoking Control Program - Provides guidance, restrictions and controls on the use and disposal of smoking materials.

- 0PGP03-ZF-0014, Fire Prevention Surveys - Provides guidance on fire prevention inspection techniques, inspection frequencies and documentation. The procedure provides guidance on performing fire prevention surveys to verify compliance with the requirements of the fire protection administrative controls procedures.

NRC Concern 2:

In order to assess the relative safety significance of Fire Area 07 and its impact on the ability to safely shutdown the reactor, submit a bounding analysis (with and without the required levels of fire protection) which postulates a fire that damages the required safe shutdown components. Describe the shutdown paths which may be available independent of the fire area of concern. If alternative shutdown is not available, this analysis should clearly demonstrate that the reduction in the fire-resistive rating of the required fire barriers without the addition of an automatic fire suppression system is not a degradation of the defense-in-depth. This analysis should also demonstrate that this reduction in the fire-resistive rating is fully compensated for by enhancements made to the original plant design which have reduced the in-situ combustibles and potential sources and improved the fire prevention administrative controls in this fire area.

South Texas Project Response:

Fire Area 07 is composed of Fire Zone 071 which is the Auxiliary Shutdown Panel area. The walls, floors, and ceiling are 3-hour rated fire barriers. Availability of equipment and cables in the Auxiliary Shutdown Panel room is required for safe shutdown in the event of a Main Control Room evacuation. Also converging in this area are all trains of Qualified Display Processing System and sequencer control cables. Currently, all trains of cables in Fire Area 07 are protected from damage by fire. The initial South Texas Project Appendix R reanalysis found that one train of equipment cables must be protected from fire to achieve safe shutdown of the plant. In response to this concern, Fire Area 07 cables were reevaluated to determine the consequences of not protecting the one train from fire.

This engineering analysis considers that Trains A and B have been compromised by fire in Fire Area 07 and that Train C is not protected by a fire resistive barrier or by any of the methods described below. The analysis resulted in a conclusion that with damage to one of a specified group of Train C cables, a Loss of Offsite Power event would occur. This analysis further concluded that if one of another specified group of Train C cables were damaged by fire, the plant Qualified Display Processing System would be rendered inoperable due to loss of power, resulting in loss of display instrumentation to the plant operators in the Control Room. The analysis also concluded that if any one of another specified group of Train C cables were damaged, inoperable safe shutdown equipment would result; extensive actions would be needed to restore operability. This reanalysis validates the conclusions of the previous analysis that one train must remain protected from fire damage in order to achieve safe shutdown.

Since all three Engineered Safety Feature trains have controls at the Auxiliary Shutdown Panel, all alternate shutdown paths converge in Fire Area 07. However, the South Texas Project maintains that there is no degradation of the defense-in-depth concept because:

- The existing Thermo-Lag installations have a 102-minute equivalent rating;
- Fire Area 07 has very low combustible loads, less than 30 minutes (with Thermo-Lag material removed from A and B trains);
- Automatic detection systems alarm locally and in the Main Control Room;
  Portable extinguishers and hose stations are installed just outside the entrance to the room (train C is closest to the door);
- An onsite fire brigade is able to respond in less than 10 minutes;
- Administrative controls limit transient combustibles;
- Access is controlled by Licensed Control Room personnel;
- Specific maintenance procedures and precautions are available when performing work with the potential to cause a fire; and
- Use of penetration seals, fire doors, fire dampers, etc., will limit the spread of any potential fire to a single area or zone, restricting the impact of fires in other zones on Fire Area 07.

Consequently, sufficient protection against fire damage is available in Fire Area 07 without the addition of an automatic fire suppression system in Fire Area 07.

NRC Concern 3:

In Fire Area 07, the Thermo-Lag fire barriers installed on the cable tray and on the conduit terminates into a box configuration located on the floor and the Thermo-Lag barrier installed on the conduit also runs through a box configuration located on the floor. The analysis that was submitted did not describe the cable tray to box transition interface and the conduit to box transition interfaces, the proposed upgrades, and the qualification tests which support the fire rating of these joint details. Submit an analysis that provides this information.

South Texas Project Response:

From the Thermo-Lag Assessment Report submitted with the September 14, 1995, correspondence requesting the deviation from Appendix R, page A3 of A132 shows each box as Node 1. The evaluation of interface of the tray and box is described on pages A41 and A42 of A132. The proposed upgrades are described on page C2 of C3. The fire tests supporting the evaluation referenced in the analysis are NEI Test 2-3 and TUEC Test 11-4.